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(54) OPTICAL FIBER BUNDLE

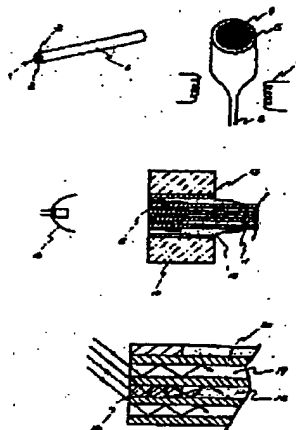
(57) Abstract:

PURPOSE: To reinforce the end part of an optical fiber bundle with prescribed dimensions by removing a glass soluble in an acid in all parts other than the end part of the optical fiber bundle coated with the glass soluble in an acid which has a refractive index higher than that of a clad glass of optical glass fibers and injecting plastics hardened by light to the end part and irradiating them to harden them.

CONSTITUTION: Many single fibers 4 where optical fiber materials consisting of a high-refractive index core glass 1 and a low-refractive index sheath glass 2 are coated with a glass 3 which is soluble in an HCl or the like and has a relatively high refractive index are arranged in a glass tube 5 soluble in an acid. They are stretched by an electric furnace 7 or the like to obtain an optical fiber bundle 6. The fiber bundle 6 is cut to a desired length. The end part is protected with acidproof materials, and glasses 4 and 5 soluble in an acid in the end part are removed to obtain a flexible fiber bundle. Acidproof materials are removed, and the end part is put in a reinforcing pipe 13 as shown in a figure and is held by a holding tool 17, and a resin 16 hardened by light such as an epoxy resin is injected into the space between the pipe 13 and the fiber bundle 6, and the end face is irradiated with the light from a

mercury-arc lamp 18 or the like. The light incident to a soluble glass 15 is reflected totally by a sheath glass 19 and is made incident on the resin 16; and when hardening advances to a prescribed position, irradiation is stopped, and the unhardened resin 16 is melted away

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